

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Attorney Docket No. 007034.00013

In re the Application of Sandrine DULAC, et al	)	
	)	
Application No. TBA	)	
	)	
Filed: November 24, 2004 (PCT filing date)	)	U.S. National Stage
	)	of International Application
For ALUMINIUM ALLOY STRIP FOR	)	No. PCT/FR2004/003002
BRAZING	)	
	)	
	)	

PRELIMINARY AMENDMENT

Mail Stop PCT  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450  
Attention: . EO/DO/US

Sir:

Prior to examination and calculation of any claim fees, please amend the instant application as follows:

**Amendments to the Title** begin on page 2 of this paper

**Amendments to the Abstract** begin on page 3 of this paper.

**Amendments to the Specification** begin on page 4 of this paper.

**Amendments to the Claims** are reflected in the Listing of Claims, which begins on page 5 of this paper.

**Remarks** begin on page 8 of this paper.

***Amendments to the Title:***

Please amend the Title as follows:

--METHOD FOR BRAZING STRIPS OF ALUMINIUM ALLOY --

***Amendments to the Abstract:***

Please insert the following replacement paragraph for the Abstract at page 10 of the application:

--The invention relates to an aluminium alloy strip or sheet with the following composition (% by weight):

Si 0.3 – 1.0; Fe < 1.0; Cu 0.3 – 1.0; Mn 0.3 – 2.0; Mg 0.3 – 3.0; Zn < 6.0;  
Ti < 0.1; Zr < 0.3; Cr < 0.3; Ni < 2.0; Co < 2.0; Bi < 0.5; Y < 0.5, other  
elements < 0.05 each and 0.15 total, the remainder being aluminium,

coated on at least one face with an aluminium brazing alloy containing 4 to 15% of silicon and 0.01 to 0.5% of at least one of the Ag, Be, Bi, Ce, La, Pb, Pd, Sb, Y elements or mischmetal. Sheets and strips according to the invention can be used particularly for fluxless brazing of heat exchangers.--

***Amendments to the Specification:***

Page 1, after the title of the invention, please insert the following section:

**--CROSS REFERENCE TO RELATED APPLICATIONS**

Applicant claims, under 35 USC §119, the benefit of priority of the filing date of a Patent Cooperation Treaty patent application, Application No. PCT/FR2004/003002, filed on November 24, 2004, which is incorporated herein by reference, wherein Patent Cooperation Treaty patent application Serial Number PCT/FR2004/03002 was not published under PCT Article 21(2) in English. Applicant also claims, under 35 USC §119, the benefit of priority of the filing date of a French patent application, Serial Number FR 03 14000, filed on November 28, 2003, which is incorporated herein by reference.--

At page 1, between paragraphs [01] and [02], please delete the heading “State of the Art” and insert the new heading --BACKGROUND OF THE RELATED ART--.

At page 3, between paragraphs [06] and [07], please delete the heading “Subject of the Invention” and insert the new heading --BRIEF SUMMARY OF THE INVENTION--.

This listing of claims will replace all prior versions, and listings, of claims in the application:

***Listing of Claims:***

1. (Currently amended) Process for assembly of aluminum alloy plates comprising fluxless brazing under controlled nitrogen and/or argon atmosphere at a temperature of between 580°C and 620°C, and rapid cooling ~~and possibly aging at a temperature of between 80°C and 250°C~~, and in which at least one of the plates ~~is composed of~~ includes a core alloy with composition (% by weight):

Si 0.3-1.0; Fe<1.0; Cu 0.3-1.0; Mn 0.3-2.0; Mg 0.3-3.0; Zn<6.0; Ti<0.1; Zr<0.3; Cr<0.3; Ni<2.0; Co<2.0; Bi<0.5; Y<0.5; other elements <0.05 each and 0.15 total, remainder aluminum,

and is coated on at least one face with an aluminum brazing alloy containing 4% to 15% of silicon and 0.01% to 0.5% of at least one of the elements element selected from the group consisting of Ag, Be, Bi, Ce, La, Pb, Pd, Sb, Y or mischmetal.

2. (Original) Process according to claim 1, characterized in that the copper content of the core alloy is between 0.35% and 1%.

3. (Currently amended) Process according to ~~either~~ claim 1 ~~or~~ 2, characterized in that the manganese content of the core alloy is between 0.3% and 0.7%.

4. (Currently amended) Process according to ~~one of claims~~ claim 1 ~~to~~ 3, characterized in that the manganese content of the core alloy is between 0.35% and 0.7%.

5. (Currently amended) Process according to ~~one of claims~~ claim 1 ~~to~~ 4, characterized in that the zinc content of the core alloy is less than 0.2%.

6. (Currently amended) Process according to ~~one of claims~~ claim 1 ~~to~~ 5, characterized in that the bismuth content of the core alloy is between 0.05% and 0.5%.

7. (Currently amended) Process according to ~~one of claims~~ claim 1 to ~~6~~, characterized in that the yttrium content of the core alloy is between 0.01% and 0.5%.

8. (Currently amended) Process according to ~~one of claims~~ claim 1 to ~~7~~, characterized in that composition of the core alloy is (% by weight):

Si 0.3-1.0; Fe<0.5; Cu 0.35-1.0; Mn 0.3-0.7; Mg 0.35-0.7; Zn<0.2; Ti<0.1;  
Zr<0.3; Cr<0.3; Ni<1.0; Co<1.0; Bi<0.5; Y<0.5; other elements <0.05 each and  
0.15 total, remainder aluminum.

9. (Currently amended) Process according to ~~one of claims~~ claim 1 to ~~8~~, characterized in that the brazing alloy is clad onto the core alloy by co-rolling.

10. (Currently amended) Process according to ~~one of claims~~ claim 1 to ~~8~~, characterized in that the brazing alloy coating is composed of particles, ~~possibly coated with a resin layer.~~

11. (Currently amended) Process according to ~~one of claims~~ claim 1 to ~~10~~, characterized in that it is used for manufacturing of heat exchangers and that aging is conducted in hot parts during operation of exchangers.

12. (New) Process according to claim 1, comprising aging at a temperature of between 80°C and 250°C after rapid cooling.

13. (New) Process according to claim 10, wherein the particles are coated by a polymer resin.

14. (New) A process for brazing aluminum alloy plates comprising:

(a) coating one or more plates with a cladding alloy comprising between 4% to 15% by weight silicon and 0.01% to 0.5% by weight of at least one element selected from the group consisting of Ag, Be, Bi, Ce, La, Pb, Pd, Sb, Y or mischmetal;

(b) subjecting the one or more plates to fluxless brazing under controlled nitrogen and/or argon atmosphere at a temperature of between 580°C and 620°C, and

(c) rapidly cooling the plates,

at least one of the plates including a core alloy comprising between 0.3% and 1.0% by weight silicon, between 0.3% and 3.0% by weight magnesium, between 0.3% and 2.0% by weight manganese, and between 0.3% and 1.0% by weight copper.

15. (New) The process according to claim 14 also comprising aging at a temperature of between 80°C and 250°C after rapid cooling.

16. (New) The process according to claim 14, wherein the core alloy also comprises between 0.05% and 0.5% by weight bismuth and/or 0.01% to 0.5% by weight yttrium.

17. (New) The process according to claim 14, wherein the core alloy comprises between 0.35% and 0.7% by weight magnesium.

18. (New) The process according to claim 14, wherein the core alloy comprises (% by weight):

Si 0.3-1.0; Fe<0.5; Cu 0.35-1.0; Mn 0.3-0.7; Mg 0.35-0.7; Zn<0.2; Ti<0.1;  
Zr<0.3; Cr<0.3; Ni<1.0; Co<1.0; Bi<0.5; Y<0.5; other elements <0.05 each and  
0.15 total, remainder aluminum.